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ABSTRACT

To assist the Costa Rican Social Security Systems in designing a Rural Community Comprehensive Health Model, a study identified functional limitations among 1253 persons over age 7; assessed functional development of 293 children, ages 0-6; identified possible preventive factors of disability; and explored practices and resources in the districts of San Antonio and Quebrada Honda, Nicoya Country, Costa Rica. Methodology involved a household survey on disabling conditions and rehabilitation; evaluation of preschool children with the Denver Development Screening Test (DDSI), Wechsler Intelligence Scale for Children (WISC), and the Beery Developmental Test of Visual-Motor Integration (VMI); and structured interviews of local health and rehabilitation leaders. Results indicated 5.76% of the total population and 4.5% of the preschool children had functional limitations, with physical, alcohol related and mental functional limitations representing the highest disability incidence. Conclusions indicated seven lacks such as lack of adequate stimulation for culturally deprived children, and lack of school and/or community resources for diagnosing disability in children. Recommendations included planning programs using local community associations and training more rehabilitation and special education professionals. (MC)

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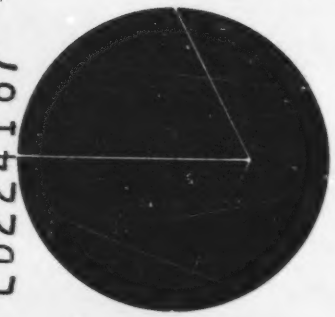

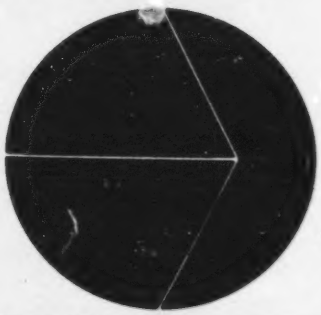

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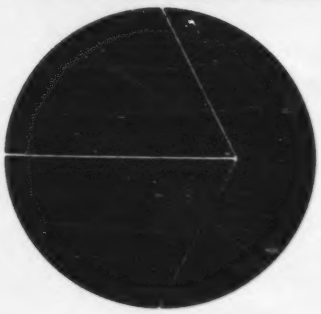

Disability and Rehabilitation in Rural Costa Rica

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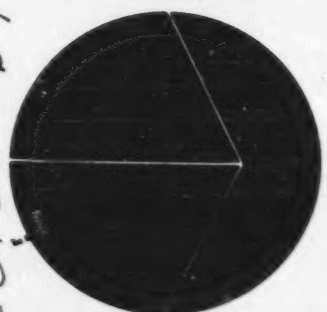

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Disability and Rehabilitation in Rural Costa Rica

By
Gaston de Mezerville

The complete text of this monograph, entitled "Status and Needs Study Regarding Disabling Conditions and Rehabilitation Factors Present in Two Rural Districts of Costa Rica," was originally submitted to Michigan State University as a Doctoral Dissertation during the Spring of 1978. The study, as presented here, has been edited considerably for purposes of reaching a wide audience. All editing was completed by Robert Jarvis, a UCIR research assistant.

This study also serves as partial fulfillment of the 1976 Agreement between Michigan State University and the Center for Training and Research of the Costa Rican Social Security System, C.T.R.

June 1, 1979

ABSTRACT

The purpose of this study was to assist the Costa Rican Social Security System in designing a Rural Community Comprehensive Health Model by conducting a status and needs study on disabling conditions and rehabilitation factors. The results of the study were designed to serve as a foundation for the analysis and diagnosis of these rehabilitation variables relevant to the implementation of this model. The specific objectives of the study were: 1) to identify functional limitations and assess the different dimensions of the resultant disabilities, 2) to conduct a complete assessment of the functional development of children, ages 0-6, 3) to identify possible prevention factors of disability, and 4) to explore some current practices and resources in the communities.

The districts of San Antonio, the setting of a current pilot implementation of the Comprehensive Health Model, and Quebrada Honda, a neighboring district of San Antonio, were selected for this study. Three methods were used for the collection of the data: 1) a household survey on disabling conditions and rehabilitation, 2) a developmental and psychological evaluation of children, 0-6 years of age, and 3) structured interviews of local health and rehabilitation leaders regarding community practices, resources and needs.

TABLE OF CONTENTS

	Page
Introduction	1
Purpose and Scope of the Study	3
Rehabilitation and the Proposed Comprehensive Health Model	5
Rehabilitation Service Delivery Model Development: The Status and Needs Study	7
Methodology	11
Subjects and Sampling Procedures	13
Instrumentation	21
Procedures	27
Results	30
Conclusions and Recommendations	42
Bibliography	45

INTRODUCTION

For many developing countries, the ability to provide adequate health and rehabilitation services is clearly affected by limited fiscal and human resources. In order to meet this challenge the government of Costa Rica has enacted legislation mandating a fully socialized health delivery system for all citizens which foresees the universalization of services to all people of the country within a few years.

The dimensions of the health care and rehabilitation services problem in Costa Rica are illustrated by the fact that there are only 1,500 physicians to serve the country's population of two million inhabitants, and 80% of those physicians are concentrated in the urban areas. In this context, sophisticated medicine and basic research, both relying on and requiring high levels of technological support, clearly cannot meet the health and rehabilitation needs of the country.

Dr. Rodrigo Sanchez-Ruphuy, Director of the Division of Behavioral Sciences of the Costa Rican Social Security System, has emphasized the need for development of a comprehensive health care system as he observed his country's present system generating a vicious cycle of under development (Figure 1). He stated, that, "Underdevelopment or low socioeconomic level produces poor diet which causes malnutrition, leading to sickness, disabilities, and shortened life expectancy. This in turn causes low economic production that contributes further to social and economic underdevelopment" (Sanchez, 1977, pp. 910-911).

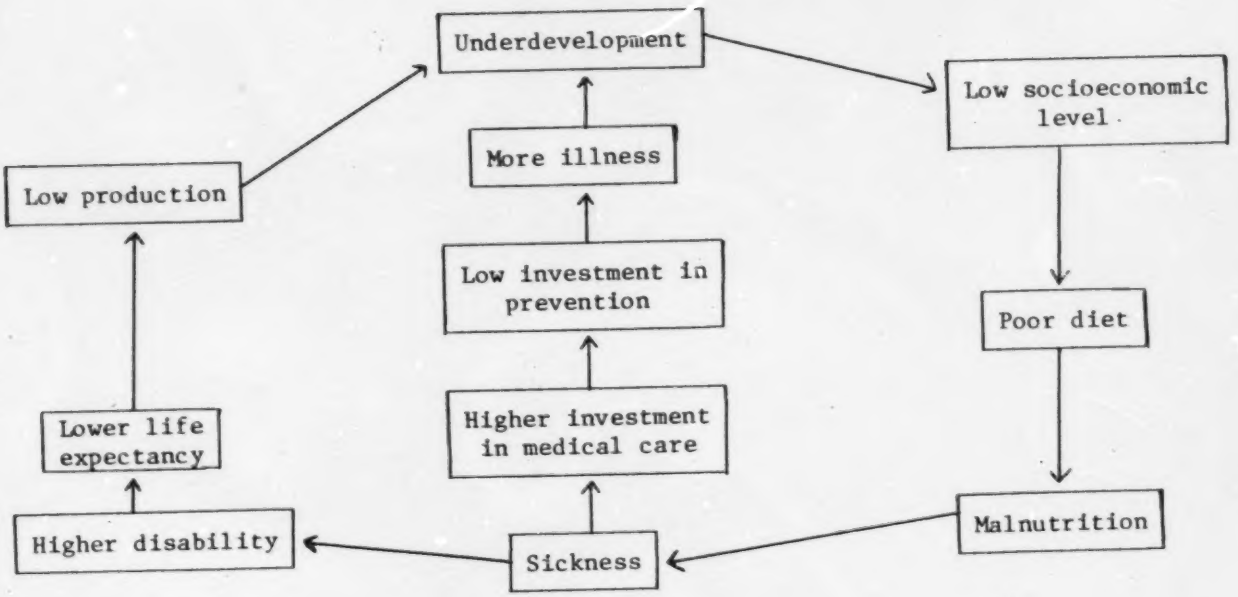

Figure 1. The cycle of underdevelopment

The Costa Rican Social Security System as well as the Ministry of Health have begun to recognize the need for promoting a new approach to health care in order to facilitate advances in community socioeconomic development. Thus, new strategies are being devised, and the task of designing an effective comprehensive health model is underway. Programs such as the "Rural Community Comprehensive Health Program of San Antonio" in the province of Guanacaste (sponsored by the Social Security System), and the "San Ramon Rural Health Program" in the province of Alajuela (sponsored by the Ministry of Health) are two examples of current attempts to establish this new comprehensive health model for Costa Rica.

At the core of the desired health model is primary emphasis on the areas of illness and disability prevention, decentralization of service provision and, interagency cooperation. Therefore, the following aspects have been given special emphasis in development of the model:

1) A Preventive Approach, which tends to identify and promote health-sustaining and disability prevention factors, instead of focusing only on the delivery of services directed exclusively toward health recovery, after the onset of illness or disability.

2) A Community Approach, which focuses initially on rural areas, in order to counteract the existing centralization of services in and around the more heavily populated cities.

3) A Cooperative Approach, which attempts to coordinate the services of various relevant professionals in the health field, as well as community resources, in order to better meet the complex needs of the people in the communities.

Purpose and Scope of the Study

The purpose of this study was to contribute to the first stage in the development of a rehabilitation model for Costa Rica by providing a description of the present status and needs of a particular rural area in regard to disabling conditions and rehabilitation services.

At the time of the proposed study, the International Rehabilitation-Special Education Network, I.R.S.E.N., was carrying out an evaluation research project in Costa Rica, which intended to measure the impact of a pilot implementation of the proposed Costa Rican Social Security Comprehensive Health Model. It assessed the health status and needs of the populations of the district of San Antonio (setting of the pilot implementation) and the comparative district of Quebrada Honda. The purpose of the present study, however, was more specific than the one pursued by the I.R.S.E.N. evaluation research project. As mentioned previously, this study focused exclusively on the present rehabilitation status and needs of two rural districts of Costa

Rica, and was meant to be a first step in the development of a rehabilitation service delivery model which was to be incorporated into the larger comprehensive health model for the country.

The specific objectives of the present study were to:

1. Identify the types of functional limitations present in the districts of San Antonio and Quebrada Honda, focusing on the different dimensions of the resultant disability in terms of the rehabilitation care received, the activity level and self-care of the disabled, and the attitudes toward disability.

2. Conduct a more complete assessment of the functional development of the children in both districts, ages 0-6, in the areas of personal-social, language, fine and gross motor development, as well as intelligence and visual-motor integration.

3. Identify possible prevention factors of disability.

4. Explore some of the practices and resources currently utilized by, and/or available to the community in dealing with disability and rehabilitation issues, and tentatively suggest areas where there was a need for improvement of the present delivery systems within their particular context.

In an attempt to improve communication in dealing with disability prevention and rehabilitation issues, some of the guidelines and terminology suggested by W.H.O. were adopted within the context of the present study.

The following definitions from the W.H.O.'s Report on Specific Technical Matters on Disability Prevention and Rehabilitation (1976) are particularly relevant for understanding the objectives of the study:

Impairment: "It is a permanent or transitory psychological, physiological, or anatomical loss and/or abnormality, such as an amputated limb, paralysis after polio, myocardial infraction, cerebrovascular thrombosis, restricted

pulmonary capacity, diabetes, myopia, disfigurement, mental retardation, hypertension, perceptual disturbance, etc. . ."

Functional Limitation: "It is the partial or total inability to perform those activities necessary for motor, sensory, or mental functions within the range of which a human being is normally capable, such as walking, lifting loads, seeing, speaking, hearing, reading, writing, counting, taking an interest in and making contact with surroundings, etc. . ."

Disability or Disabling Condition: "It is an existing difficulty in performing one or more activities which, in accordance with the subject's age, sex and normative social role, are generally accepted as essential, basic components of daily living, such as self-care, social relations, and economic activity" (W.H.O., 1976, p. 7-8).

Finally, although it is widely accepted that the field of Special Education deals specifically with the impact of disability on individuals of preschool and school age, for the purposes of this study the term "Rehabilitation" encompassed all actions in regards to disabling conditions affecting persons of all ages, whether they be children, youth, or adults.

Rehabilitation and the Proposed Comprehensive Model

Several specialized agencies within the United Nations (the World Health Organization, W.H.O.; the United Nations Educational Scientific and Cultural Organization, U.N.E.S.C.O.), as well as other organizations such as the International Society for Rehabilitation of the Disabled (I.S.R.D.) have suggested that at least 10% of any country's population suffers some type of physical or mental disability. According to this estimate, Costa Rica faces the challenge of providing rehabilitation services to approximately 200,000 disabled persons.

The Costa Rican National Council for Rehabilitation and Special Education, N.C.R.S.E., has recently stated that the existing resources in the field of rehabilitation are not enough to offer adequate services to more than 25% of the disabled population (N.C.R.S.E., 1977). This lack of resources is particularly acute in the rural areas due to the disproportionately high concentration of available services in and around the country's largest cities.

In response to the need for increasing rehabilitation services and resources in all countries, especially in fast developing countries, W.H.O. has suggested a general strategy of intervention to diminish the impact of disability. In W.H.O.'s Report on Specific Technical Matters on Disability Prevention and Rehabilitation (1976) the disability problem in the world was closely examined and proposals for its solution were formulated. These proposals, however, were meant to be adapted to the specific conditions of each country. In this regard, there seemed to be a high degree of agreement between the W.H.O. suggestions and the essential elements of the aforementioned health model presently being developed in Costa Rica. The Comprehensive health model currently considered by the Costa Rican Social Security System makes provision for the development of specific strategies in the fields of rehabilitation and mental health which may be incorporated with the overall proposed comprehensive health model.

The National Council of Rehabilitation and Special Education (N.C.R.S.E.) is the leading entity in Costa Rica presently responsible for developing and coordinating efforts toward the incorporation of a service delivery model into the total health care system. This Council represents the Social Security System as well as a dozen other institutions, and works in collaboration with the Ministry of Health, the Ministry of Education, and the Ministry of Labor and Welfare.

At the present time, the N.C.R.S.E. has addressed the need for development of a strategy that could better serve the country in the area of rehabilitation services. The strategy refers specifically to the field of disability prevention and rehabilitation, but as mentioned previously is also meant to be incorporated within the larger framework of a comprehensive health model for Costa Rica.

A first step in the development of the rehabilitation component of the comprehensive health model was to undertake a status and needs study to serve as a foundation for the diagnosis and analysis of some critical variables that needed to be taken into account in the implementation of such a rehabilitation model.

According to the W.H.O.'s report on specific technical matters, the implementation of a status and need study prior to the development of a new model contributes significantly to avoidance of many planning and operational deficiencies that most conventional services in rehabilitation have had in the past (W.H.O., 1976, p. 25).

Rehabilitation Service Delivery Model Development
The Status and Needs Study

In the context of "need" as previously described, the purpose of the present study was to contribute to a first stage in the development of a rehabilitation model by providing a description of the status and needs of a particular rural area in Costa Rica in regard to disabling conditions and rehabilitation. Such an assessment constitutes a necessary first step in program planning and program evaluation. According to Anderson, Ball, Murphy, and Associates (1975), "Needs assessment is the process by which one identifies needs and decides upon priorities among them." In this regard, a need can be defined as a

discrepancy between the current state of affairs and the desired state of affairs (English and Kaufman, 1975, p. 64).

Some authors (Trantow, 1970; Helander, 1977) stress the necessity of community status and needs assessment in the initial stages of program planning and development. Trantow (1970) suggests a "Program Planning Cycle" which also illustrates the relationship between intervention and evaluation over time within a well-developed program. This ideal process has the following steps:

1. Detect and define community problems and identify the unmet needs.
2. Survey the available and potential resources (facilities, financial, support, personnel).
3. Establish priority goals (match needs and resources, develop alternative programs, choose most appropriate programs).
4. Formulate and implement the necessary administrative activities to achieve program goals.
5. Relate results to goals by periodic or continuing evaluation studies, or both.
6. Repeat the process (redefine problems, reassess unmet needs, resources) (Trantow, 1970, p. 7).

Similarly, in a proposed disability prevention and rehabilitation program with special reference to cerebral palsied persons in Jordan, Dr. E. Helander, acting as a W.H.O. consultant, suggested the following steps, which are illustrative of the W.H.O. model of intervention in a community setting:

1. Survey to find out the size of the problem, analyze the needs of the population and the possible preventative measures and strategies feasible for the delivery of services;
2. Set up pilot activities to assess the effectiveness of prevention;
3. Set up pilot activities for delivery of the most essential services for CP victims, and the assessment of their effectiveness;
4. Finally, when needs are known, and pilot activities have revealed the cost/effectiveness of various different possibilities to achieve the aims: Program and implement a full-scale effort to prevent CP and rehabilitate CP victims (Helander, 1977, p. 2)

Among his recommendations regarding the conduct of a needs assessment prior to the development of program activities, such as that proposed in the present study, Helander suggested the following strategy:

> (To gather information regarding) . . . the needs for rehabilitation, as perceived by the patients themselves, their families and communities. This would serve to get "the consumer's view." At the same time, the needs for actions should be defined by specialists, to get the "attributed needs." Implementation should preferably start with meeting the most pressing needs, as perceived by the population itself, and gradually change its emphasis towards meeting attributed needs (Helander, 1977, p. 2)

The Rehabilitation Services Administration's Report of the Comprehensive Service Needs Study (1975), which was developed in compliance with the Rehabilitation Act of 1973, contains many program evaluation studies conducted at all different levels of Trantow's "Planning Cycle." Most of these studies, however, refer to community needs assessments and evaluation projects in the context of already existing rehabilitation programs. Their purpose was to evaluate the appropriateness, adequacy, efficiency, and/or effectiveness of the programs and to make recommendations concerning possible ways for improving them.

Mathew's Community Health Survey Project (1974), on the contrary, exemplified a needs assessment of Black communities living in the Mississippi Delta prior to an organized strategy of intervention, similar to the intentions of the present study. In this study, a group of 75 homes was selected at random, and all the household heads were given a questionnaire which evaluated different aspects such as poverty, housing, education, physical health, early life experiences, and mental health. The results of this project provided identification and analysis of important facts related to the health needs and resources of the Black communities. This information was used later as a foundation for initiating health programs geared toward the fulfillment of those needs. As mentioned previously, W.H.O. (1976) has stressed the need

for conducting needs assessments prior to program intervention as a first step in the implementation of a rehabilitation strategy in different countries of the world (p. 25). It is evident, however, that W.H.O.'s general model, in order to be effectively carried out, must be adapted to the particular circumstances and cultural characteristics of each country. Similarly, the methods utilized in conducting needs assessment necessarily vary depending on the type of problem to be measured, the samples used, and the resources available, etc. Helander (1977), for instance, suggested three different approaches for collecting data related to cerebral palsy and general disability in Jordan:

1. To include a question regarding mobility disturbances in the 1978 national census in Jordan.

2. To have the persons identified by the census as presenting mobility disturbances examined by an expert to determine whether the functional limitations in use of the extremities depends on cerebral palsy or on other impairments.

3. To conduct a parallel general disability survey with a sample of some 4,000 households (or a total of 25,000 to 30,000 individuals) (Helander, 1977, pp. 2-3).

Conducting this type of survey in Jordan exemplified the fact that more than one method can and should be utilized in assessing community needs. Household survey, developmental or psychological testing, professional assessment of rehabilitation individuals, may all be possible and meaningful methods to tap the needs of a particular community.

In choosing the appropriate methods to be applied in international settings, careful consideration must be given to the culture where the research is conducted. Arici, from Hacettepe University in Ankara, affirms that "as cultural factors affect an individual's behavior in many ways, behavior cannot be measured or analyzed independent of culture . . . Differences between cultures and differences among subcultures within a culture should always be given due attention in developing tests or adapting instruments from other

cultures" (In L.J. Cronbach, 1972, p. 20).

Instrument adaptation becomes especially relevant in the field of rehabilitation when attempting to measure the psycho-social components of disability. As Ortar (1972) has stated, "Most countries do not produce their own psychological tests and have to adapt instruments developed elsewhere. Change is needed to make the test suitable in circumstances different from those for which it was originally prepared. Modifications vary in kind and extent, and 'adaptation' may range from rewording of a few items to construction of a virtually new test based on the original model. The most frequent procedure is translation of test into a different language with modifications of some items.

Translations of well-known tests into different languages are often available to the researcher who finds himself in the planning stages of the design of a cross-cultural study. In the book Cross-Cultural Research Methods, Brislin and associates stress the fact that a translation of a test, however, "by no means constitutes a license to apply it without first carefully considering its validity and reliability for its current cross-cultural use" (Brislin, et al., 1973, p. 155).

Attention should also be given to the subcultural context within a culture where a particular instrument of measurement is to be used. Differences between urban and rural populations, between higher and lower socio-economic classes as well as between the educated and the uneducated deserve special consideration in the process of selecting and interpreting psychological tests.

Methodology

Several different approaches were considered in designing the procedures for collection of information in the present study. Some alternatives included

longitudinal and cross-sectional surveys, clinical assessments of disability, and structured or unstructured interviews regarding community practices and rehabilitation resources in rural Costa Rica.

After considering the alternatives, the following three information gathering strategies were selected due to their potential for supplying the desired information given the objectives and particular constraints of the study.

1. A household survey of functional limitations and resultant disabilities. This approach dealt with the identification and assessment of functional limitations and resultant disabilities, and identification of possible disability prevention factors. By using a survey designed with a representative sample of households in the designated rural geographical districts, basic information concerning functional limitations, attitudes towards disability and rehabilitation care received was systematically investigated.

2. A psychological and developmental evaluation of children, ages 0-6. The functional development of all children younger than six years of age who were part of the sample families who completed the household survey was assessed. The test areas included social, language, fine and gross motor development, as well as intelligence and visual-motor integration.

3. Structured interviews regarding community practices, resources and needs. Three prominent individuals from the fields of medicine, education, and social sciences in the community were interviewed concerning the impact of each one of their speciality areas on the disability situation of the districts.

   In addition to the opinion of these authorities, an opinion poll of the households in the districts was also conducted within the household

survey. It addressed those "felt needs" of the population regarding health and rehabilitation services, education, family diet, housing, and working situations, as well as their available means of social action for bringing about changes in the existing system.

Subjects and Sampling Procedures

The districts of San Antonio and Quebrada Honda, which are part of the Nicoya County in Costa Rica (see Figures 2 and 3), were selected at the sites for the present status and needs study.

San Antonio is known as the third district of Nicoya, a county within the province of Guanacaste in Costa Rica. Its area is 204 square kilometers, with seven thousand inhabitants living in approximately 1,200 dwellings (see Figure 4). For the past two years, San Antonio has been the site for a pilot implementation of the Social Security Comprehensive Health Model described earlier.

Quebrada Honda, a neighboring district of San Antonio, the fourth district of Nicoya County, was also selected to be a part of this study (see Figure 5). It is smaller than San Antonio having about 1/3 the population. The proximity of this district to the city of Nicoya, the methods of transportation and its geographical location, among other characteristics, are similar to those of San Antonio. The distinguishing feature between the two districts is the fact that Quebrada Honda was not included as a part of the initial piloting of the Comprehensive Health Model. Consequently, this district was chosen to be a comparison group for the evaluation project that I.R.S.E.N. was conducting in Nicoya.

A first priority for the present sample design was the building of an adequate sample frame. It had been decided since the beginning of the pilot implementation of the Comprehensive Health Model in San Antonio to utilize maps on which every dwelling could be drawn. Also, specific information about each

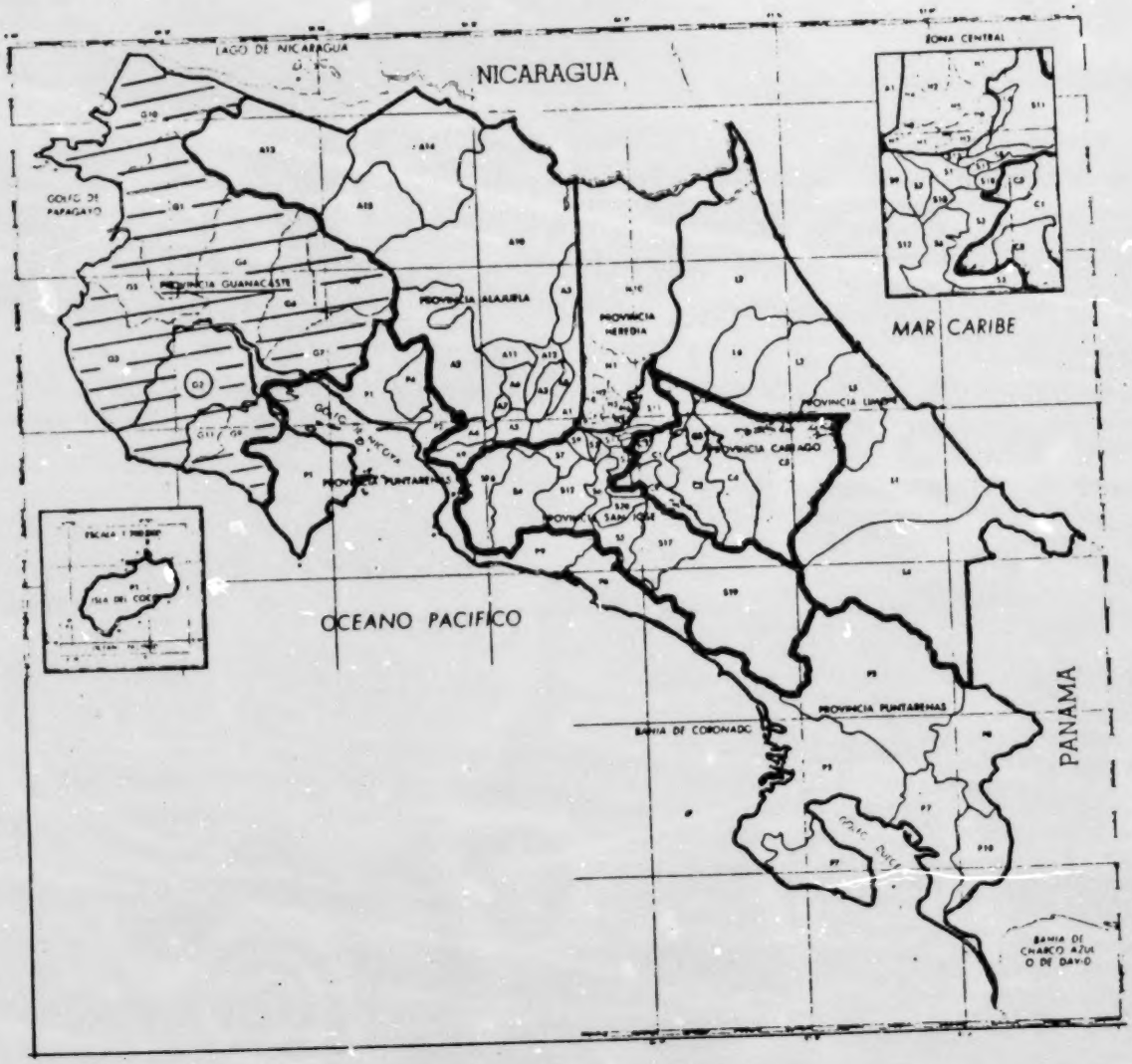

Figure 2. Nicoya County (G2) in the province of Guanacaste, Costa Rica.

Figure 3. Districts of San Antonio and Quebrada Honda in Nicoya County, Guanacaste.

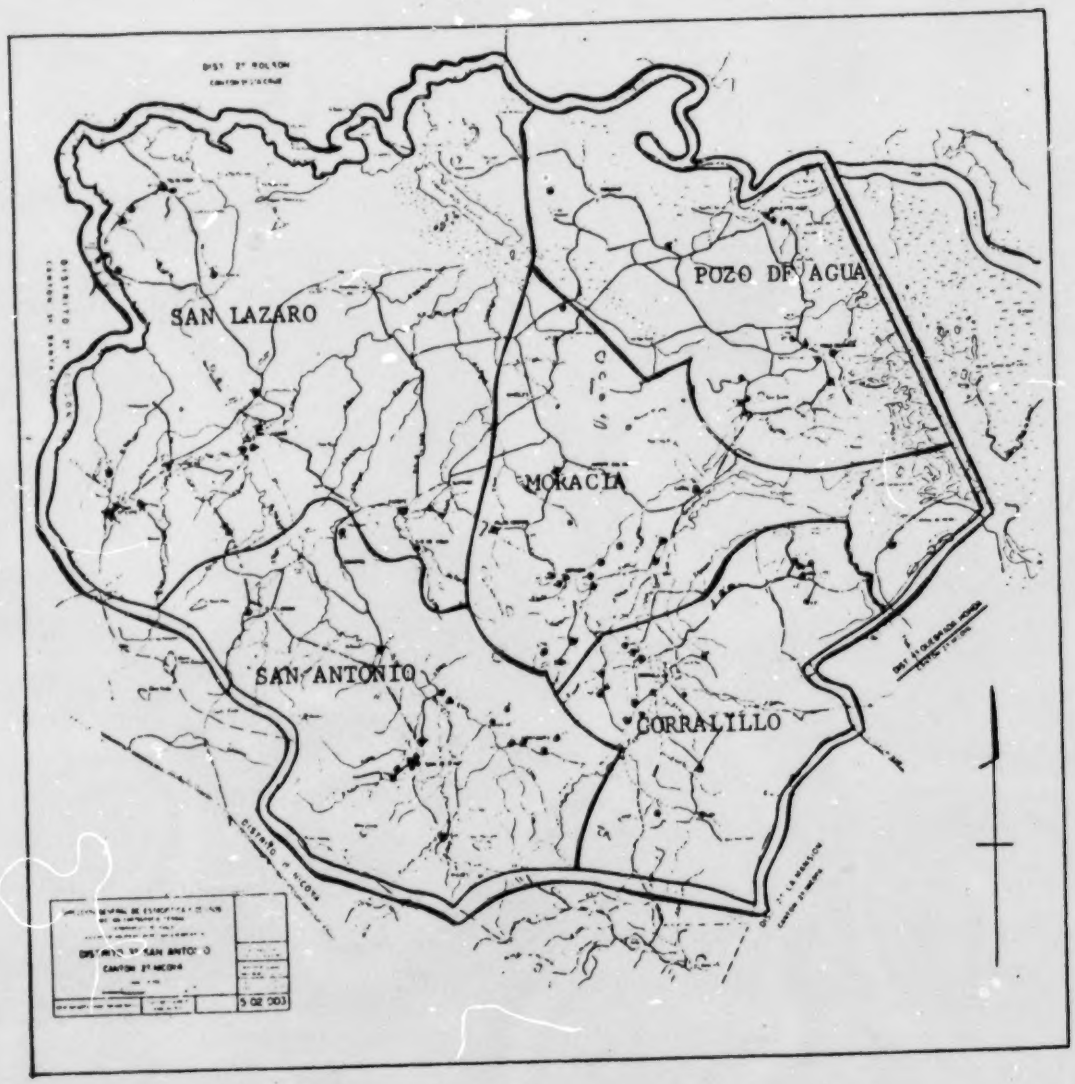

Figure 4. District of San Antonio, divided by Sectors. Sample 1.

household in the district was recorded and kept in the files of the rural health centers in the towns. This information was gathered according to the needs of the project, and in a fashion that would be easy to replicate for other districts or counties where the Comprehensive Health Model could also be implemented. The household information recorded was:

1. Name of the sector
2. Name of the subsector
3. Number of the dwelling
4. Distance from the dwelling to the nearest health center
5. Total number of members of the dwelling
6. Total number of preschool age children
7. Total number of school age children
8. Total number of adults
9. Participation of the members of the dwelling in community associations

Prior to the implementation of the present study, a similar sample frame was constructed for about 75% of the dwellings in the district of Quebrada Honda. Due to the lack of necessary resources, not all of the dwellings in Quebrada Honda were recorded. As can be seen in Figure 5, the dwellings included in the sample frame were well-distributed throughout the district and appeared to be adequately representative of the dwellings throughout Quebrada Honda. The following assumptions were basic in the organization of the data included as a part of the sample frame:

1. It was assumed that the farther the distance between the dwelling and the closest health center, the lower would be the level of health prevention in the house. Thus, for the purpose of conducting research, this variable had to be adequately controlled.

2. A second assumption indicated that the age composition of the family had an impact on the level of health prevention in the house. Families with preschool age children and/or school age children were expected to show a higher level of health prevention than those families represented only by adult members. Therefore, this variable needed to be controlled also in the design of the research study.

3. A third assumption was related to participation in community associations. Experience in the health field in Costa Rica seems to indicate that those families whose members participate actively in community associations

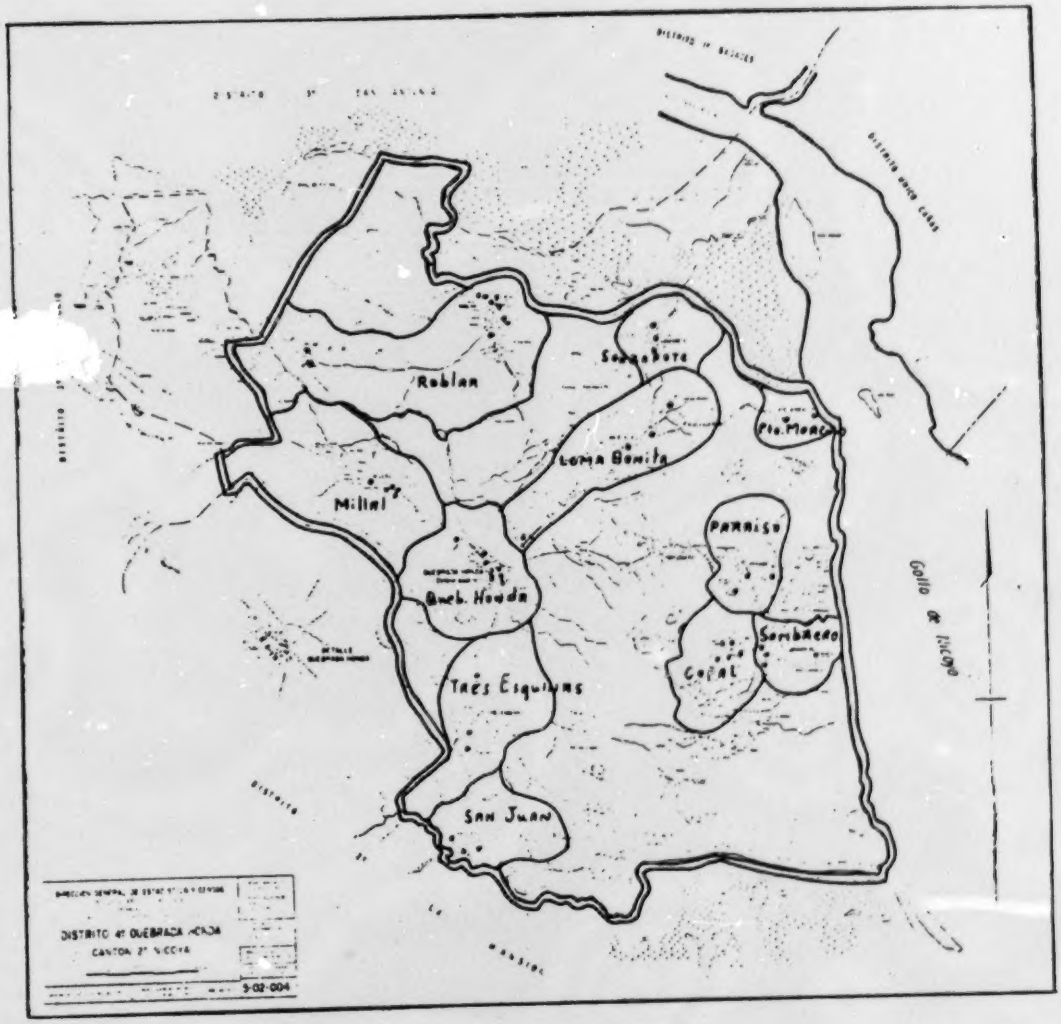

Figure 5. District of Quebrada Honda, divided by Subsectors. Sample 1.

have a higher level of health prevention than those who do not. Thus, this variable had to be controlled also in order to account for its influence on the results of the study.

Within the sample frame for San Antonio and Quebrada Honda the districts were subdivided into geographic sectors and subsectors. A sector included several localities with a total number of about 200 dwellings. Taking into account the main centers of population within each, the sectors were again divided into subsectors, each of which included a different number of dwellings, depending mainly on their geographical locations. The limits of sectors and subsectors were clearly defined and indicated on the maps (see Figures 4 and 5), and each house was adequately numbered within the subsector and the sector to which it belonged.

Thus, San Antonio was subdived into five sectors and twenty subsectors as follows:

1. San Antonio - 4 subsectors
2. San Lazaro - 5 subsectors
3. Moracia - 5 subsectors
4. Pozo od Agua - 3 subsectors
5. Corralillo - 3 subsectors

Quebrada Honda was not subdivided into sectors due to the fact that its recorded number of dwellings was only 222. This district, however, was subdivided into eleven subsectors following the same criteria used in the district of San Antonio. The subsectors of Quebrada Honda are the following: Quebrada Honda, Copal, Loma Bonita, Millal, Paraiso, Puerto Moreno, Sonzapote, Roblar, San Juan, Tres Esquinas, and Sombrero.

According to the criteria described above, all the dwellings in the population were classified by district as follows:

1. Family composition:

   - Preschool age, school age children, and adults
   - Preschool age children and adults only
   - School age children and adults only
   - Adults only

2. Participation in community associations:

   - yes
   - no

3. Distance from the dwelling to the nearest health center (as measured by the time that it takes for a person to get there, while using the most common type of transportation available to the members of the house):

   - Less than half an hour
   - Half an hour to one hour
   - More than one hour

4. Sectors:

   - San Antonio
   - San Lazaro
   - Moracia
   - Pozo de Agua
   - Corralillo
   - Quebrada Honda

The population of dwellings in each district was subsequently divided into four groups with regard to the four categories of "family composition." These four groups were then divided into eight according to their "participation in community associations." The eight groups just mentioned above were divided again into twenty-four in relation to the three categories of "distance to the nearest health center." Finally, these twenty-four groups were divided into 120 groups in the case of San Antonio, which has five sectors, but were not divided further in the case of Quebrada Honda, which includes only one sector.

Once the dwellings had been ordered through the procedure previously described, the sample was obtained by systematic random sampling. Thus, two samples of 100 dwellings were chosen for San Antonio, and one sample of 50 dwellings was selected for Quebrada Honda.

The following tables present in detail the number of persons included as a part of the sample in relation to the total number of persons in the population (Table 1) as well as a break-down by age of the persons that participated in this research project (Table 2):

Table 1. Number of persons and dwellings of the population and sample population in the districts of San Antonio and Quebrada Honda.

AREA	POPULATION		SAMPLE	
	Dwellings	No. of Persons	Dwellings	No. of Persons
San Antonio	1,176	7,221		
Sample 1			100	646
Sample 2			100	588
Quebrada Honda	222	1,291	50	312

Table 2. Sample population according to developmental age groups in the districts of San Antonio and Quebrada Honda.

AREA	SAMPLE				
	Dwellings	No. of persons	Less than age 7	ages 7-15	over age 15
San Antonio					
Sample 1	100	646	126	174	356
Sample 2	100	588	113	153	322
Quebrada Honda	50	312	54	84	74

Instrumentation

A general health questionnaire was developed by IRSEN-Michigan State University and IRSEN-Costa Rica for the purpose of evaluating the pilot implementation of the Comprehensive Health Model. A specific section regarding disability and rehabilitation was exclusively developed according to the objectives of this study and built into the more general health questionnaire. The addition specifically sought to identify functional limitations and to assess the different dimensions of resultant disabilities.

Both questionnaires, the General Health Questionnaire and the Household

Questionnaire on Disability and Rehabilitation, were administered as a single instrument, both contributing to and complementing one another in the fulfillment of their particular objectives.

The Household Questionnaire on Disability and Rehabilitation focused specifically on the stages of functional limitation and disability. Functional limitations were recorded in the following areas: physical, mental, preschool and school age limitations, alcoholism, and "harmful patterns of interpersonal relating." In order to arrive at the decision of which types of functional limitations would be included in the questionnaire, several authorities in the districts were consulted. The physicians involved in the Comprehensive Health Program, for instance, reported no incidence of drug addiction in the communities. On the other hand, they stressed the need of including a section on functional limitations related to excessive alcohol consumption due to the great incidence of alcoholism in the small towns. The civil authorities also described juvenile delinquency as a relatively non-existant phenomenon in the area. They reported, however, that "harmful patterns of interpersonal relating" were common, particularly among males, and constituted a source of concern for the authorities in the community. The local school teachers stressed a high incidence of learning and developmental problems in the children of these districts.

Therefore, the different types of functional limitations included in the questionnaire were considered to be common in the districts and worthy of being given special attention by a status and needs study on disabling conditions and rehabilitation factors. For systematic purposes they were classified as follows:

AREAS	FUNCTIONAL LIMITATIONS
(Basically) PHYSIOLOGICAL	Physical
	Preschool Age
	School Age
(Basically) PSYCHOLOGICAL	Mental
	Alcoholism
(Basically) SOCIAL	Harmful Relating

Figure 6. Basic classification of Functional Limitations.

A first draft of the Household Questionnaire on Disability and Rehabilitation was piloted through a sample of fifteen households in Nicoya County - outside the geographical boundaries of the districts participating in the study. Based on the results of this pilot test of the questionnaire, all the items were qualitatively reanalyzed regarding content and form and a revised draft was produced.

Due to the nature and short length of the questionnaire it was not possible to derive a reliability coefficient of the instrument. However, in order to increase the degree of scorer reliability, printed detailed instructions were handed out well in advance of the scheduled time for the field work, and several training sessions were conducted for learning how to accurately record the desired information.

The "Field Manual" used for the training of the interviewers included the following sections:

1. General approach to the study
2. Organization of the research
3. General concepts and definitions (such as sample, dwelling, respondents, etc.)
4. Content of the questionnaire and recording procedures
5. Detailed description of main functional limitations researched through the questionnaire (C.C.S.S., 1977).

During the one-week training prior to the field of work, the questionnaires were distributed to the interviewers, and each of the sections of the Field Manual was carefully reviewed. By the end of the week all the interviewers demonstrated their proficiency in handling the questionnaire by performing simulated interviews under close supervision.

Finally, the questionnaire was administered to the whole sample of dwellings: San Antonio 1 and 2, Quebrada Honda 1 (see Table 1).

The Children Evaluation

The children evaluation was adopted as a part of the study design in an attempt to secure an in depth assessment of the disability situation in the districts which the household survey by itself could not offer.

In choosing the appropriate instruments for measuring the functional development of children younger than six years of age many cultural considerations were taken into account. As was previously discussed, a careful selection of the instruments was necessary in order to control those intervening variables which are always present in cross-cultural research. Also, the tests chosen for this study needed to provide the best possible assessment of the children in areas such as gross-motor and fine-motor development, language and intelligence, visual motor integration, and social skills, etc. Based on such considerations the following three tests were selected:

1. The Denver Developmental Screening Test (DDSI). This test was devised to provide a simple method of screening for evidences of slow development in infants and preschool children.

Since its publication in 1967, the DDST has been extensively used throughout the United States and in English-speaking countries. The Reference Manual and the Test Forms have also been translated into Spanish, thus making it

available to Spanish-speaking countries. The Spanish version of the DDST, however, continues to utilize the original DDST developmental norms which have not as yet been adapted to the standards of different cultural areas.

In the national Children's Hospital in Costa Rica, which operates under the Social Security System, the DDST has been successfully used by the medical staff for screening purposes during the last two years.

For these reasons, and despite the fact of not having been standardized yet in a Spanish-speaking country, the DDST was considered the most complete developmental test available.

2. The Wechsler Intelligence Scale for Children (WISC). This test is the most well-known intelligence test for children available at the present time. It was originally designed in 1949 by David Wechsler for children between the ages of 5 and 14 years. The WISC provides verbal and performance scales which include a total of 12 different measures or subtests (Wechsler, 1949). In the present study only the six verbal subtests were utilized.

The WISC was standardized in its Spanish version in Puerto Rico. A sample of 128 children from the cities of San Juan, Sancturce, and Catano was used for standardization purposes in 1951. The results of this research study showed reliability and validity coefficients similar to those of the original English version (Wechsler, 1951, pp. 90-129).

In Costa Rica the psychologists of the Social Security System have been using this Spanish version of the WISC for many years, considering it the most reliable intelligence test available for children in this country.

3. The Beery Developmental Test of Visual-Motor Integration (VMI). This paper and pencil test, developed in 1967 by Keith Beery and Norman A. Buktenica, consists of 24 geometrical forms which are arranged in an order of increasing difficulty (Beery, 1967). The Beery can be administered to children

between the ages of 2 and 15 years although it was originally designed for preschoolers and school children in the first grades. The purpose of the VMI is to evaluate the development of visual-motor behavior in children by analyzing the degree of integration of visual perception and motor coordination.

The VMI appeared to be particularly valid when utilized in cross-cultural research because of its use of geometrical forms instead of numbers or letters, which ensures a high degree of familiarity with the figures of the test on the part of children coming from different previous experiences and backgrounds.

The VMI has also been used in Costa Rica for several years although no attempts have been made to adapt it to Costa Rican norms.

In summary, the DDST, the WISC, and the VMI were the tests chosen to be given to the children in the districts. The number of children that took each one of the tests can be seen in Table 3.

These children represent the complete sample 1 for San Antonio and Quebrada Honda of ages 0-6.

Table 3. Number of children assessed with the DDST, WISC, and VMI tests, by category according to sex and age.

TESTS	SEX		AGE			Totals
	Male	Female	0-2	2-4	4-6	
DDST	69	71	42	51	47	140
WISC	23	23	-	-	46	46
VMI	23	23	-	-	46	46

The Structured Interviews

Structured interviews served the purpose of collecting information concerning current practices and resources utilized by and/or available to the local rural communities in dealing with disability and rehabilitation issues. It

was necessary to add these interviews to the data gathered through the Household Survey and the Children Evaluation in order to complete the status and needs picture of the districts.

Two different types of structured interviews were devised for gathering data on rehabilitation practices and resources used in the communities. The first type included in its design all of the 250 households which were chosen as a part of the sample for the Household Survey. The second type, on the other hand, focused exclusively on three key persons in the districts whose professional competence and experience in dealing with disability and rehabilitation issues in the area made their responses highly valuable in the context of the rest of the data gathered in this study.

The persons interviewed were:

1. The Director of the Rural Community Comprehensive Health Program
2. The Senior Principal of the Pozo de Agua Elementary School in San Antonio
3. The Head of the Social Work Unit in the Hospital la Anexion in Nicoya, Auanacaste.

These interviews were planned in advance, and adopted an open-question format to allow for a maximum instrument potential in recording the information. There was a common denominator in the questions asked to each professional inasmuch as they were all concerned with the persons' perceptions of disabling conditions and rehabilitation needs in his/her area. A large segment of each interview, however, focused on the particular experience of each person, and the impact of his/her speciality area on the disability picture of their district.

Procedures

The field work for the Household Survey on Disability and Rehabilitation was conducted by a group of 25 medical, psychology, and nursing undergraduate

students from the University of Costa Rica. Each student played the role of interviewer, visiting a number of the dwellings chosen as a part of the sample. The interviewers were trained to observe and record appropriate information regarding functional limitations and resultant disabilities present in the households as well as to transcribe the respondent's replies to the questionnaire.

The field work stage of this research study was carried out during a period of four weeks. Throughout that time, and for two weeks afterwards, discrepancies regarding location of the dwellings, membership in households, mistakes in recording procedures, etc. were corrected by visiting those specific households for a second time. This effort, however, was limited due to the lack of sufficient resources allocated to this stage of the project.

For a month and a half following the field work the staff of IRSEN-Costa Rica collaborated in the process of coding the data gathered; during this time, a Costa Rican physician diagnosed the individual cases where a physical functional limitation was identified by the General Health Survey.

The developmental and psychological evaluation of children younger than 6 years of age was carried out by undergraduate students in psychology, who personally evaluated each one of the children in their assigned households. The group of 40 psychology students from the University of Costa Rica that participated in the project was carefully trained by the author regarding the use of the chosen psychological and developmental tests.

Besides administering the tests in the children's homes, the psychology students recorded their personal observations regarding the child's behavior during testing.

The child's immediate environment during testing was also recorded as a part of the observations, when it was considered that it had affected the child's performance in the test. Finally, the students were asked to include

as a part of their observations the cases of those children who obviously presented a functional limitation in the following areas:

a. Language limitation (speech handicap or immature language development)
b. Sensorial limitation (sight, hearing . . .)
c. Motor-anatomical limitation (legs, arms, fine-motor . . .)
d. Mental limitation (extremely slow learner, lack of memory . . .)
e. Multi-cap (more than one of the previous functional limitations)

The psychological and developmental evaluation of the children was conducted in the districts during a three day period, four months prior to the administration of the Household Questionnaire on Disability and Rehabilitation. The testing situation in the homes lacked many of the conditions which are generally considered conducive to reliable testing results. However, the familiar environment, as apparently disturbing as it may have seemed, may have contributed positively to the child's feeling of personal ease and self-confidence which might not have been achieved in a setting outside of the home.

During a period of four weeks following the evaluation of the children the tests collected were carefully evaluated, and in cases of inappropriate administration of a test, it was repeated to the child by visiting the home for a second time. Experienced staff from the Psychometrics Unit in the San Jose's main Social Security Hospital contributed to the final computation of the tests results.

Finally, the structured interview of the households was conducted following the same procedure previously described for the Household Survey on Disability and Rehabilitation.

In the case of the structured interview to the three professionals in the districts each one of the interviews was carried out by the author of this study after six months of personal involvement in the life of the communities.

Results

Table 4 indicates the relative frequencies and percentages of each type of functional limitation identified. A total of 89 functional limitations were found which represented 5.76% of the total sample from the districts of San Antonio and Quebrada Honda. This finding, much smaller than the United Nations world wide estimate of 10% disabled, would seem to reflect the lack of awareness in rural areas of the presence of certain types of disabilities, for example learning disabilities.

Table 4. Types, frequencies, and percentages of identified functional limitations assessed in terms of resultant disability.

	FUNCTIONAL LIMITATIONS					
ASSESSMENT	Physical	Mental	Pre-School	School	Alcohol	Harmful Relating
Assessed	32	15	3	7	22	4
Not assessed[a]	1	0	1	2	2	0
Total[b]	33 (37%)	15 (17%)	4 (4.5%)	9 (10%)	24 (27%)	4 (4.3%)

Note. N = 89 functional limitations
% of functional limitations = 5.76
(Total sample = 1,545 persons)

[a]The 6 individuals classified as "Not assessed" were identified in the questionnaire as presenting a functional limitation but were not evaluated further due to mistakes on the part of the interviewers.

[b]9 of the 89 limitations were a combination of physical and 1 other functional limitation, in which case they were classified as physical.

Table 4 further indicates that physical, alcohol related and mental functional limitations represented the highest disability incidence. The greatest percentage of physical limitations corresponded to disease of the nervous system and sense organs (37.5%), particularly in the areas of visual pathology

(25.0%) and auditory pathology (9.4%). The classification of diseases was based on the medical diagnosis of a physician who interpreted the data recorded in the questionnaires.

Of those individuals identified as having alcohol-related limitations 100% were males and 0% were females with nearly 80% of these persons ranging in age between 20 to 60 years.

Mental illness, which was defined in the questionnaire as including all persons presenting a serious mental disorder or "insane" behavior, accounted for 50% of the total number of mental limitations. Mental retardation accounted for 32% of the total, while senility represented approximately 18%. Findings also suggested that approximately one out of three individuals identified as having a mental disorder similarly presented a physical limitation.

Table 5 indicates the incidence of different types of rehabilitation care or treatment received. Results indicated that most of the institutional or professional assistance provided fell under the categories of medical-oriented treatment. For the most part, individuals presenting alcohol-related limitations did not appear to be receiving any type of rehabilitation care. The same appeared to be true of the small number of subjects classified as school-learning problems or harmful-relating types of difficulties.

It is important to note that only 6% of the persons suffering from important physical limitations have received orthopaedic treatment, while findings would indicate that a much greater percentage seemed to require it or at least be likely to benefit from it.

Table 5. Incidence of different types of rehabilitation care and treatment received by persons in each category of functional limitations.

TYPES	FUNCTIONAL LIMITATIONS						Total
	Phys.	Mental	Pre-School	School	Alcohol	Harmful Relating	
Institutional:							
Yes	12 (37%)	8 (53%)	2 (67%)	1 (14%)	1 (5%)	0 (0%)	24 (29.2%)
No	20 (63%)	7 (47%)	1 (33%)	6 (86%)	20 (95%)	4 (100%)	58 (70.8%)
Professional Assistance:							
Yes	12 (40%)	6 (40%)	2 (67%)	1 (14%)	2 (10%)	0 (0%)	23 (28.8%)
No	18 (60%)	9 (60%)	1 (33%)	6 (86%)	19 (90%)	4 (100%)	57 (71.2%)
TREATMENT: Medicines:							
Yes	10 (31%)	9 (60%)	1 (33%)	1 (14%)	2 (10%)	0 (0%)	23 (28.0%)
No	22 (69%)	6 (40%)	2 (67%)	6 (86%)	19 (90%)	4 (100%)	59 (72.0%)
Orthopaedic:							
Yes	2 (6%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (2.5%)
No	30 (94%)	15 (100%)	3 (100%)	7 (100%)	21 (100%)	4 (100%)	80 (97.5%)
Specialized Groups:							
Yes	0 (0%)	1 (6%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1.2%)
No	32 (100%)	14 (94%)	3 (100%)	7 (100%)	21 (100%)	4 (100%)	81 (98.8%)
Special training, exercises or other:							
Yes	0 (0%)	0 (0%)	3 (100%)	0 (0%)	0 (0%)	0 (0%)	3 (3.7%)
No	31 (100%)	15 (100%)	0 (0%)	7 (100%)	21 (100%)	4 (100%)	78 (96.3%)
Data Missing	1	-	1	2	2	-	6
Total	32	15	3	7	22	4	83

Note. N = 89 functional limitations identified in the districts. Percentages are shown within the parentheses.

By defining an arbitrary range of item scores related to self-care, activity level, and attitudes toward the limitation, a compound estimate was derived for every individual in relation to each one of these areas, thus classifying the functional limitation into one of three possible categories: mild (none), moderate, or severe disability-related condition.

Table 6 presents the frequencies and percentages of all functional limitations with regard to a compound estimate of individual self-care level. With the exception of the physical limitations which are evenly distributed, all other limitations seem to place their highest percentages in only one or at the most two of the disability-related categories.

Table 6. Incidence of functional limitations, by category according to a compound estimate of individual self-care level.

	FUNCTIONAL LIMITATIONS					
SELF-CARE	Physical	Mental	Pre-School	School	Alcohol	Harmful Relating
Severe	8 (25.0%)	1 (6.7%)	2 (66.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Moderate	14 (43.8%)	6 (40.0%)	1 (33.3%)	7 (100.0%)	21 (95.5%)	4 (100.0%)
Mild (none)	10 (31.3%)	8 (53.3%)	0 (0.0%)	0 (0.0%)	1 (4.5%)	0 (0.0%)
Totals	32 (100.0%)	15 (100.0%)	3 (100.0%)	7 (100.0%)	22 (100.0%)	4 (100.0%)

The incidence of functional limitations according to an overall compound estimate of individual disability-related conditions is indicated in Table 7.

Table 7. Incidence of functional limitations, by category according to an overall compound estimate of individual disability-related condition.

OVERALL DISABILITY-RELATED CONDITION	FUNCTIONAL LIMITATIONS					
	Physical	Mental	Pre-School	School	Alcohol	Harmful Relating
Severe	2 (6.3%)	0 (0.0%	0 (0.0%	0 (0.0%	0 (0.0%)	0 (0.0%)
Moderate	12 (37.5%)	5 (33.3%)	3 (100.0%)	1 (14.3%)	6 (27.3)	1 (25.0%)
Mild (none)	18 (56.3%)	10 (66.7%)	0 (0.0%)	6 (85.7%)	16 (72.7%)	3 (75.0%)
Totals	32 (100.0%)	15 (100.0%)	3 (100.0%)	7 (100.0%)	22 (100.0%)	4 (100.0%)

The trend already indicated by the previous tables regarding higher percentages of limitations categorized as moderate or mild is even more clearly indicated by Table 7. More than 50% of the individuals appear as mildly disabled despite the more sobering facts indicated before concerning the self-care needs and the homebound condition of an important number of persons in the districts.

The attitude and activity levels of the persons who suffer from different types of functional limitations seem to be the determinant factor lessening the impact of such a physical, mental, or social condition upon the lives of the subjects.

In the cases of those individuals who were identified as having a physical limitation, their families seemed to view that limitation as a more serious problem than the persons themselves. This can be appreciated in light of the fact that even though the largest percentage of cases is categorized under moderate or mild disability-related condition, 56.2% of the limitations are viewed by the families as moderate, while four out of every five physical limitations are perceived as mild by the individuals themselves.

The families' attitudes regarding mental limitations coincided very closely to those of the persons who experience the limitation. This is not the case with alcohol-related conditions, where 77.3% of the families categorize the problem as moderate or severe, compared to the figure of 27.3% which represents the way the alcoholic individuals classify themselves according to the same two categories.

Developmental assessment of children, ages 0-6, in San Antonio and Quebrada Honda indicated that approximately four percent of the children were identified as "abnormal." This figure might in reality tend to be higher in light of the relatively large percentage of children classified as "questionable" (21.3%). These results corresponded closely with the United Nations estimate that "5 percent of the child population suffers from severe handicaps, whereas an additional 10 to 15 percent may need special attention so as to overcome less severe handicaps" (UN, 1976).

Results of the structured interviews with the families further indicated a general lack of awareness of disabled persons in their communities. More than 50% indicated either no direct contact with or awareness of disabled persons in the community.

Families' perceptions of the practices and resources available to the community to deal with more general disability and rehabilitation issues indicated feelings that present services were fair to good (Table 8).

Table 8. Means and standard deviations of peoples' opinions regarding different issues as they pertain to family and community life.

ISSUES		CATEGORIES	
		Family	Community
Medical attention[a]:	$\bar{x}$	3.084	3.107
	SD	.749	.631
Family diet[b]:	$\bar{x}$	2.183	2.060
	SD	.628	.584
Elementary school education[b]:	$\bar{x}$	2.837	2.832
	SD	.596	.657
High school education[b]:	$\bar{x}$	2.993	2.786
	SD	.599	.645
Housing conditions[b]:	$\bar{x}$	2.048	2.218
	SD	.695	.607
Working situation[b]:	$\bar{x}$	2.016	1.895
	SD	.772	.748

Note. Sample = 250 households
Population = 1,400 households

[a]Criteria for interpretation:
4 = very good
3 = good
2 = inadequate
1 = not received

[b]Criteria for interpretation:
4 = very good
3 = good
2 = not very good
1 - inadequate

Sample opinion clearly indicated that families in these rural districts viewed local groups and local influential people as the most viable means of bringing about changes for community improvement. Subsequently three key professionals whose experience was closely related to the disability problem and rehabilitation needs of the districts were interviewed in terms of their perceptions of current practices, resources, and community needs. A summary of these interviews is presented:

Interview with the Director of the Rural Community Comprehensive Health

Program in San Antonio.

Practices and Resources: The Costa Rican Social Security System and the Ministry of Health are the two main institutions that provide health services in the area.

The Social Security "Hospital de la Anexion" in Nicoya is a modern medical center that serves the peoples of Nicoya County and neighboring counties in Guanacaste. It is also the home base of the San Antonio Comprehensive Health Program.

In order to obtain services from the Social Security System employers are required by law to set aside a small amount of each employee's monthly check to cover the health needs of the worker and his/her immediate family members. Those persons who are unemployed, and consequently not covered by Social Security, can pay directly a small amount to the System or demonstrate their lack of material resources and apply for free medical services which are then charged to the Government.

The Social Security System operates five health centers in the district of San Antonio, which are served by five nurses, one of them in each town, working under the daily supervision of the Director of the Program. Each person in the district, covered or not by the Social Security Legislation, is entitled to receive services at the town's health center as a part of the new rural comprehensive health program. When there is a need for further treatment, the person is referred to the "Hospital de la Anexion." Other Social Security hospitals, however, will not serve this person unless he/she is duly covered by the Social Security legislation.

The Ministry of Health is the main institution providing health care in the district of Quebrada Honda. It has staffed one health center in the town of Quebrada Honda, and delivers services throughout the district by means of

"mobile units" which visit periodically each outlying town. Persons needing special treatments are referred also to the "Hospital de la Anexion," when they are covered by Social Security Legislation, or to the hospitals of Liberia or Puntarenas which are run by the Ministry of Public Health.

Many people in the districts are unaware of the health services that they are entitled to receive or ignore the ways to go about in soliciting them. The law is not strong enough in enforcing social security legislation and many employers do not comply with their obligation to have all of their employees covered by Social Security. People in the rural areas do not know much either about their right to receive free health services if they abide by the government's provision concerning social security services to persons who do not have the means to secure those services on their own through the normal channels.

Need: There is an important incidence of physical and mental disabilities. Many of them are diagnosed as congenital, possibly linked to poor living conditions and inter-marriages among close relatives.

Concerning physical disabilities, whether they are of a congenital nature or caused by old age, accidents, etc., there is no orthopaedic treatment offered at the "Hospital de la Anexion," nor the availability of prosthesis, orthesis, etc. If the person is covered by the Social Security Legislation then he/she can use the services of other hospitals in the country. Otherwise, the person remains at home, and is cared for by his/her relatives. There are exceptions to this rule, consisting of people who have had the means to get professional rehabilitation care by traveling to urban centers.

With regard to mental disabilities, two types of cases are consistently referred to the psychiatrist at the "Hospital de la Anexion":

1. Psychosomatic disorders, particularly stomach ulcers and tension headaches.
2. Problems that require drug treatment:

a. Epilepsies (some of them related to mental retardation or psychiatric problems).

b. Schizophrenia or other types of psychotic disorders.

The psychotherapy provided in conjunction with the drug treatment is very limited and in most cases non-existent.

Psychoneurotic problems are seen by general practitioners who customarily prescribe tranquilizers as their only way of treatment.

The highest incidence of referrals received by the Rural Community Comprehensive Health Program are classified in the following order:

1. Heart diseases and hypertension.
2. Psychosomatic problems, depressive, anxious, and/or menopausic states.
3. Rheumatoid arthritis and allied conditions.
4. Digestive system disorders: ulcers, parasites, etc.

There is very little done concerning the incidence of alcoholism as a source of disability in the rural areas. Over-drinking is culturally accepted, especially in males, and therefore reinforced in many different ways. There is no Alcoholics Anonymous organization in the districts and people seem to be unaware of the magnitude of this problem.

Interview with the Senior Principal of the Pozo de Agua Elementary School in the district of San Antonio.

Practices and Resources: In Costa Rica there is compulsory elementary education as mandated by the law; therefore, all children are expected to attend school. Over the past twenty years there has been a gradual change of attitude in the rural areas regarding the concept of usefulness of an elementary school education. Currently, parents want their children to attend school, although it implies in some cases that poor families will not be able to count on their individual contribution to the family income. Consequently, there has been

a decreasing number of absentees every year. The children are given free lunch at school, prepared by the "Patronato Escolar," which is a very concrete incentive in relation to school attendence.

The Pozo de Agua Elementary School is a typical small town school similar to all others throughout the districts of San Antonio and Quebrada Honda. It counts on the services of three teachers, including the principal, who teach a total of 115 students. The first, third and fifth graders come to school in the mornings, and the second, fourth and sixth graders attend in the afternoons.

There is only one secondary school in the district of San Antonio, in the town of Corralillo, which is just starting its first year. The 125 students currently enrolled are meeting in a "rancho" for the present time, while the school building is being finished.

Need: Concerning the area of learning disabilities, there are no special education classrooms or schools in the districts of San Antonio and Quebrada Honda. Although some teachers have listened to talks on this topic, none has special training in this area. A specialist from the Ministry of Public Education is responsible for visiting the schools every few months, but the effects of his intervention are very limited. The nearest special education school is in the county of Santa Cruz (see County G3 in Figure 2, page 13). There are also two specialized classrooms at the elementary school in the city of Nicoya, one for deaf-mute children and the other for children with different types of learning disabilities. Two special education teachers are in charge of these classrooms.

The Pozo de Agua Elementary School has no means of evaluating learning disabilities. Most of the parents are uneducated and interpret the presence of learning disabilities in their children as plain lack of interest in school and a sure sign that they are meant to be trained for doing manual labor.

Sight and hearing malfunctions, when discovered, are referred to the physician who visits the town.

Children are automatically promoted to the following level at the end of each school year, up to the fifth grade, and those who present any learning disability follow the same educational process that the other nondisabled children do. The only exception mentioned was the case of a hearing-disabled child, daughter of one teacher at the San Antonio School, who was referred by her mother to the special education classroom for deaf-mute children in Nicoya.

Interview with the head of the Social Work Unit at the Hospital de la Anexion.

Most of the information regarding practices and resources is identical to that included in the interview with the Director of the Comprehensive Health Program.

Practices, Resources, and Needs: The Social Work Unit at the Hospital de la Anexion has been staffed with three social workers who serve in that capacity to the needs of people in Nicoya County and other neighboring counties. One of their main responsibilities consists of writing a complete case study on those individuals whose particular situation and type of disability seems to indicate that special measures must be taken in order to provide the rehabilitation services that the persons require.

Therefore, a case study is written by the Unit workers after visiting the home of persons who present the following needs:

1. In the case of children who: (a) suffer malnutrition and/or gastro-intestinal disorders, and (b) do not seem to benefit from periodic medical treatment. In these circumstances the social worker tries to educate those persons involved by stressing the factors that need to change in order to solve the situation.

2. A case study is also conducted to determine the need for prosthetic devices in the case of different physical disabilities. The case study can also determine the need for government aid, in the appropriate cases, and for making the person eligible to receive Social Security Health Services. In these particular cases, the persons need to travel to a different medical center to receive the rehabilitation treatment and prosthetic devices that are required by their specific type of disability.

Conclusions and Recommendations

The main findings of the study concerning the rehabilitation needs of these rural districts of Costa Rica may be summarized as follows:

1. Lack of rehabilitation treatment other than medical treatment, which is usually limited to the prescription of medicines.

2. Lack of orthopaedic treatment for persons who suffer from physical limitations.

3. Lack of any type of program or rehabilitation strategy for problems concerning alcoholism.

4. Lack of adequate stimulation in children as a consequence of cultural deprivation in some of the homes which appears to be the determinant factor related to developmental delays in language and fine-motor control.

5. Lack of school and/or community resources for diagnosing and properly dealing with most disabilities in children.

6. Lack of community awareness regarding the incidence of disabling conditions in the districts and the available means for dealing with them.

7. Lack of adequate rehabilitation treatment received by disabled persons in the communities due, to a certain extent, to defective components in the present delivery system.

In this study, the status and needs regarding disabling conditions and rehabilitation factors present in two rural districts of Costa Rica were assessed, and the first two steps of Trantow's "Program Planning Cycle" were achieved: (a) the detection of community problems and identification of unmet needs, and (b) the surveying of available and potential resources.

The subsequent step in the process, which may be defined as the establishment of priority goals, should consist of the implementation of activities such as (a) matching identified needs and resources, (b) developing alternative strategies of intervention, (c) selecting the most appropriate programs to be used in the rural communities, etc.

Two facts should be taken into account in establishing priorities and planning solutions to the needs identified in this study:

1. One of the main strengths of the Social Security System Comprehensive Health Program in San Antonio consists of the effective utilization of the community's own potential for working cooperatively and applying existing resources to the solving of their needs. In fact, the community people themselves suggested, in the Household Interview conducted as a part of this study, that the activities carried out by their local associations constituted the most effective means of action for community improvement. Therefore, the active participation of the people in the towns should be considered an essential element in the planning of any program designed to meet their needs.

2. The lack of human resources in the rural areas, trained in the fields of rehabilitation and special education, seems to encompass all other needs identified in this study and should be given careful consideration in the conceptualization of future programs. Presently, the National Council of Rehabilitation and Special Education, N.C.R.S.E., and the University of Costa Rica are giving special emphasis to the creation of a Master's Degree training program

in comprehensive rehabilitation, as well as to the improvement and expansion of the existing Special Education Program. Through these efforts, more professionals will be available in the future to contribute to the solution of the rehabilitation needs of the country. However, there seems to also be a need for the training of paraprofessionals who could be placed in the rural towns, where they are needed, working under the periodic supervision of professionals in the field. In the article Psychology and Medicine: A New Approach for Community Health Development, Dr. Rodrigo Sanchez-Ruphuy suggests a tentative training program and intervention strategy for this type of paraprofessionals in Costa Rica (Sanchez-Ruphuy, 1977, pp. 910-913).

Although the results of the present study were designed to be interpreted in the context of the two rural districts involved, they may also be analyzed in a much broader context, provided that the characteristics of the area investigated here be similar to those of other rural areas in the country. With regard to this point, further studies should be conducted in an attempt to gather more information concerning these two, as well as other rural districts in all relevant variables descriptive of their populations.

Finally, this study has attempted to serve as a foundation for the diagnosis and analysis of some variables in rehabilitation which should be taken into account in the implementation of a rehabilitation model in Costa Rica.

Considered from this perspective, future research and program activities related to disability and rehabilitation in rural areas must be conducted following the general strategy adopted by the overall rehabilitation model in the country.

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